



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁵: C07K 15/28, C12P 21/08, A61K 39/395, G01N 33/577	A3	(11) International Publication Number: WO 94/29351 (43) International Publication Date: 22 December 1994 (22.12.94)												
(21) International Application Number: PCT/GB94/01290 (22) International Filing Date: 15 June 1994 (15.06.94) (30) Priority Data: <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">9312415.4</td> <td style="width: 40%;">16 June 1993 (16.06.93)</td> <td style="width: 30%;">GB</td> </tr> <tr> <td>9401597.1</td> <td>27 January 1994 (27.01.94)</td> <td>GB</td> </tr> <tr> <td>9402499.9</td> <td>9 February 1994 (09.02.94)</td> <td>GB</td> </tr> <tr> <td>9406244.5</td> <td>29 March 1994 (29.03.94)</td> <td>GB</td> </tr> </table> (71) Applicant (for all designated States except US): CELLTECH LIMITED [GB/GB]; 216 Bath Road, Slough, Berkshire SL1 4EN (GB). (72) Inventors; and (75) Inventors/Applicants (for US only): MORGAN, Susan, Adrienne [GB/GB]; 1A Ennerdale Crescent, Slough, Berkshire SL1 6EH (GB). EMTAGE, John, Spencer [GB/GB]; 49 Temple Mill Island, Temple, Marlow, Buckinghamshire SL7 1SQ (GB). BODMER, Mark, William [GB/GB]; Rose Cottage, 5 Manor Road, South Hinksey, Oxford OX1 5AS (GB). ATHWAL, Diljeet, Singh [GB/GB]; 33 Casella Road, New Cross Gate, London SE17 (GB). (74) Agent: MERCER, Christopher, Paul; Carpmaels & Ransford, 43 Bloomsbury Square, London WC1A 2RA (GB).		9312415.4	16 June 1993 (16.06.93)	GB	9401597.1	27 January 1994 (27.01.94)	GB	9402499.9	9 February 1994 (09.02.94)	GB	9406244.5	29 March 1994 (29.03.94)	GB	(81) Designated States: AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, GE, HU, JP, KE, KG, KP, KR, KZ, LK, LU, LV, MD, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU, SD, SE, SI, SK, TJ, TT, UA, US, UZ, VN, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 23 February 1995 (23.02.95)
9312415.4	16 June 1993 (16.06.93)	GB												
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9406244.5	29 March 1994 (29.03.94)	GB												
(54) Title: ANTIBODIES (57) Abstract <p>The invention provides antibodies with altered ability to fix complement. The invention further relates to pharmaceutical, therapeutic and diagnostic compositions containing said antibodies and to methods of therapy and diagnosis using said antibodies. The invention additionally provides a method of modulating the function of cell surface associated antigens using said antibodies. Also provided are processes for preparing said antibodies.</p>														

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 5 C07K15/28 C12P21/08 A61K39/395 G01N33/577

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 5 C07K C12P A61K G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	INTERNATIONAL REVIEWS OF IMMUNOLOGY, vol.10, June 1993, LONDON GB pages 241 - 250 JOLIFFE L. K. 'Humanized antibodies: enhancing therapeutic utility through antibody engineering' see the whole document ----	1-3, 5-15, 17-19
X	JOURNAL OF IMMUNOLOGY, vol.148, June 1992, BALTIMORE US pages 3461 - 3468 ALEGRE M.-L. ET AL. 'Effect of a single amino acid mutation on the activating and immunosuppressive properties of a "humanized" OKT3 monoclonal antibody' cited in the application abstract ----- -/-	1-3, 5-15, 17-19



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents :

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- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

9 January 1995

Date of mailing of the international search report

20.01.95

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Espen, J

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>EUROPEAN JOURNAL OF IMMUNOLOGY, vol.23, 1993 pages 1098 - 1104 GREENWOOD J. ET AL. 'Structural motifs involved in human IgG antibody effector functions' cited in the application see the whole document ---</p>	1,2, 5-15,17, 18
X	<p>PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, vol.88, October 1991, WASHINGTON US pages 9036 - 9040 CHAPPEL M. S. ET AL. 'Identification of the Fcγ receptor class I binding site in human IgG through the use of recombinant IgG1/IgG2 hybrid and point-mutated antibodies' cited in the application see the whole document ---</p>	1-3, 5-15,17, 18
A	<p>THE JOURNAL OF EXPERIMENTAL MEDICINE, vol.173, no.4, April 1991 pages 1025 - 1028 TAO M.-H. ET AL. 'The differential ability of human IgG1 and IgG4 to activate complement is determined by the COOH-terminal sequence of the Ch2 domain' cited in the application see the whole document ---</p>	
A	<p>PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF USA, vol.80, 1983, WASHINGTON US pages 6632 - 6636 NOSE M. ET AL. 'Biological significance of carbohydrate chains on monoclonal antibodies' see the whole document ---</p>	
A	<p>NATURE, vol.332, 1988, LONDON GB pages 738 - 740 DUNCAN A.R. ET AL. 'The binding site for C1q on IgG' cited in the application see the whole document ---</p>	
A	<p>JOURNAL OF IMMUNOLOGY, vol.125, 1980, BALTIMORE US pages 293 - 299 LAMPSON L. A. ET AL. 'Two populationS of Ia-like molecules on a human B cell line' cited in the application -----</p>	

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Remark: Although claim 19 is directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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